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PATENT & TRADEMARK OFFICE

CLAIMS AMENDMENTS

What is claimed is:

Claims 1-7 (canceled)

8. (currently amended)

A method for stabilizing ~~and accumulating~~ cellular RNA in vivo resulting in an increase in the total amount of cellular mRNA per cell as well as the accumulation of rarer and particularly unstable mRNAs inside cells such as RNA processing intermediates comprising:

1) preparing microbial culture media depleted of phosphate
2) adding thio[-]phosphate as the sole source of phosphate to the media
3) culturing micro-organisms in the modified media for a sufficient time such that most mRNAs and/or rRNAs are modified with phosphorothioate linkages
4) ~~subsequently~~ utilizing the stabilized RNA for ~~enhanced~~ easier detection ~~of RNA and/or to protect RNA from nucleases during purification processes used to isolate RNA from cells~~ owing to the enrichment of mRNA relative to rRNA in total RNA as well as the enrichment of unstable mRNAs relative to total mRNA and/or for the stabilization of particular RNA species during in vitro isolation and analysis via Northern blotting, RT-PCR, RNA protection assays, DNA chip assays and other similar RNA/RNA or other similar DNA/RNA based hybridization assays.

9. (currently amended)

A method for chemically modifying the RNA inside the cells of complex organisms comprising:

1) identifying the source of organic phosphate in the organism's diet
2) removing the organic phosphate source from the diet by either substituting thio-phosphate for organic phosphate in the diet or adding an excess of thio-phosphate to the diet

3) feeding thio-phosphate to the organism by ~~substituting thio-phosphate for organic phosphate in the diet~~ adding it to solid feed, or by feeding the organism a liquid source of thio-phosphate, or alternatively by injecting thio-phosphate directly into the organism.

10. (currently amended)

A method to ~~globally increase the synthesis and/or excretion of cellular proteins~~ preferentially enhance the synthesis of a population of proteins and/or protein of interest by stabilizing the corresponding mRNA(s) in vivo comprising:

1) growing cells in thio-phosphate containing media

2) determining the optimal ratio of thio-phosphate to inorganic phosphate in the culture media ~~for maximal protein induction of the bulk population of proteins, typically using a marker protein of interest~~ such that the desired mRNA specie(s) along with those mRNAs having similar half-lives are preferentially stabilized relative to naturally abundant and more stable mRNA species as evidenced by the enhanced protein expression of one or more gene products of interest

3) determining the optimal time point ~~of cultivation for maximum levels of protein accumulation for the majority of cellular proteins and/or particular protein of interest~~ to induce stabilization of the mRNA(s) of interest via the addition of thio-phosphate containing media for enhanced protein expression of the corresponding gene product(s).

11. (previously amended)

The method of claim 10 wherein the cells used to generate the proteins or protein of interest are prokaryotic or eukaryotic in origin.

12. (currently amended)

The method of claim 10 wherein the proteins or protein of interest is produced using a recombinant DNA or viral expression vector or ~~whole virus~~ is a viral protein produced by an intact virus.

13. (currently amended)

The method of claim 10 wherein the ~~global~~ enhancement of one or more proteins in cells results in an increase in a rate limiting ~~enzyme~~ reaction(s) and as such is used to increase the rate or yield of non-protein products such as antibiotics, chemical intermediates, organic acids, etc. in fermentation reactions.

14. (cancelled)